



## EFFECT OF ENGAGEMENT IN CASSAVA VALUE ADDITION ACTIVITIES ON RURAL HOUSEHOLDS IN SAKI EAST LOCAL GOVERNMENT AREA OF OYO STATE

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### ABSTRACT

The diverse uses and demands for cassava products have impact on rural households hence this study was carried out to determine the effect of engagement in cassava value addition activities on rural households in Saki-East Local Government Area of Oyo State. Data were collected on respondents' personal characteristics, source of information, various forms of value addition activities, benefit of value addition of cassava on rural household and various constraints faced by cassava farmers. Multistage sampling procedure was used to select sample of 120 respondents. Data were analyzed using descriptive and inferential statistics at  $p=0.05$ . The mean age was 43 years with standard deviation of 17.23 years and mean household size of 5 persons with standard deviation of 3.81 persons. Majority of the respondents (74.2%) were female and married (62.5%), 44.2%, 46.7% and 43.4% were Christians, had secondary education and had more than 20 years of processing experience. Various forms of cassava value addition activities respondents engaged in were garri, fufu, lafun, starch, livestock feed, flour, chips and tapioca. Benefit of cassava value addition activities were mostly on increase in household food security (80.8%), increase in income (66.7%) and generation of employment for rural dwellers (58.3%). The respondents had low level of benefit. Major constraints faced by respondents were inadequate capital (63.1%), transportation problem (50.8%) and low level of cassava tuber production (41.7%). Respondents' age ( $\chi^2=5.72$ ), household size ( $\chi^2=6.69$ ) and marital status ( $\chi^2=2.14$ ) were significantly related to the benefit derived from engagement in value addition activities. In spite of various cassava value addition activities respondents engaged in, respondents' level of benefit was low. The study recommends that adequate credit facilities should be provided. There is also the need for farmers to be encouraged to venture into more cassava tuber production so that raw materials for processing will be readily available.

**Keywords:** Cassava, value addition, rural households

### INTRODUCTION

Cassava is one of the important sources of food in the tropics. It is a crop that is extensively used in trade. The collaborative study of cassava in Africa (COSCAI) has shown that in tropical Africa, 40% of total cassava is planted purposely for sale and that cassava contributes more cash income to households than any other crop. (Onabolu and Bokanga, 2003). Cassava is a starchy root crop and it is fondly called the anti-famine crop in Africa. No nation in the continent that extensively cultivate this sturdy crop has been known to suffer widespread famine in recent years. It is also the most important root crop in Nigeria in terms of food security and employment creation (Ukpabi, 2008).

Value addition simply implies the process of increasing the economic worth or value of a commodity by transforming it to another commodity termed as a value added commodity. It includes local processing, packaging, cooling, drying, extracting or any other types of process aimed at improving the value of raw agricultural produce. Value addition has been identified as a pathway for farmers out of poverty. A study by Unterschultz, Jeffrey, and Qugraine (2000) suggest that farmers would be better off with increased prices of their produce as a result of value addition. Lundy, Ostertag and Best (2002) observed that opportunities exist for rural households to improve

their incomes and diversify their livelihoods through value addition.

Some value added products from cassava includes cassava flour, starch, bread, chin-chin, chips, flakes, odourless fufu, doughnut, cake, biscuit and animal feed. The value adding technology in cassava consumption, diversifying its uses as well as using same to enhance livelihoods of farm families through providing opportunities for employment, micro agro enterprises, development income and boosting economy of rural households (Nwakor, Ekwe, Amagbo, Anyaegbunam, Ironkwe and Asumagha, 2007). Again, Amamgbo, Ekwe and Aeniedu (2006) observed that diversification of cassava use promises high potentiality for wedging hunger, alleviating poverty as well as enhancing the livelihoods of many rural farm households. Thus development and dissemination of cassava value adding technologies by National Root Crops Research Institute, Umudike is timely, appropriate and vital in the current effort to improve the livelihoods of rural households.

Despite the aforementioned importance of value addition, Nigeria still suffers from challenges which would have been overcome if the farmers had been engaging in cassava value addition. For instance, Awoyinka (2009) noted that Nigeria can earn about US\$5 billion per annum from cassava and its by-products, making it a key foreign

exchange earner and instrument for job creation and catalyst for development. The USAID (2013) records also reveal that Nigeria spends about USD 680 million annually on importation of flour, starch, glucose, and animal feed, most of which can be made from processed cassava. In boosting the rural economy, reports inferred that a farmer who harvested a basin of cassava and sold it at five hundred naira(500) has the opportunity of making five thousand naira (5,000) from that basin of cassava through the value addition activities. Attempt by National Root Crops Research Institute (NRCRI), Umudike, Nigeria to add value to cassava have led to development of several products such as cake, bread, chin-chin, from cassava in order to diversify its utilisation (Ekwe, Nwafor, Ironkwo and Amangbo, 2008).

Onabolu and Bokanga, (2003) opines that with the increase in population and with the current trend in the economy and trend towards urbanization, the need to diversify the products made from cassava and to maintain their appeal to customers is of high priority and it calls for more investment in product development and research on cassava. As such this study sought to examine effect of engagement in cassava value addition activities on rural household in Saki east local government area of Oyo state. The broad objective of this study is to investigate the effect of engagement in cassava value addition activities on rural household in Saki east local government area of Oyo state.

The specific objectives are to:

- i. describe the personal characteristics of the respondents in the study area.
- ii. identify the sources of information of value addition activities in the study area.
- iii. examine various value addition activities by farmers in the process of adding value to cassava.
- iv. ascertain benefit derived from engagement in cassava value addition on rural household
- v. identify the constraints faced by cassava processors in the process of adding value to cassava.

## METHODOLOGY

The study was conducted in Saki East Local Government Area of Oyo state with its headquarter at Ago-Amodu. The Local Government Area has five major communities namely; Ago-Amodu, Sepeteri, Ogbooro, Oje-Owode and Agbonle. It has an area of 1,569 square kilometres and an estimated population of 110,223 (National Population Commission, NPC, 2006). Saki East Local Government Area was purposively chosen because it is rural-based and they participate actively in cassava production,

processing and marketing. Population of the study consists of all cassava processors in the study area.

A multistage sampling procedure was used in selecting the respondents. In the first stage, two (2) major cassava processing centres were randomly selected from each of the major community making ten (10) processing centres. In the second stage, twelve (12) respondents were randomly selected in each of the processing centres. In all, (120) one hundred and twenty respondents constituted the sample size.

Structured interview schedule and questionnaire were used to elicit data from the respondents. Data were analysed using descriptive statistics (frequency and percentage) and the hypothesis was tested using chi-square. Information collected were on socio-economic characteristics of the respondents, source of information, various value addition activities by processors, benefits derived in engagement in value addition as well as the problems encountered in cassava processing activities.

## RESULTS AND DISCUSSION

Result on table 1 shows that 74.2.2% of the respondents were female. This is expected given the fact females are always engage in post-harvest activities. This is in line with the observation of Ezedinma *et al* (2007) who reported that cassava processing is a female dominated activity. It was also found that 50.8% of the respondents were between 21 and 40 years of age with the mean age of 43years. It implies that farmers are in their active age and can still participate actively in agricultural production. This result is in consonance with that of Yekini (2011) that mean age of farmers in Nigeria is 43 years.

The marital status result of the respondents show that 62.5% of them were married and only 18% were single revealing that most of them had family responsibilities. The distribution of the respondents based on religion reveals that 44.2% were Christians and only 20% were traditional worshippers. The information on educational level of respondents indicates that larger percentage (46.7%) had secondary education compared to others. This implies low literacy level may have negative impact on adding values to cassava.

The information on household size of the respondents indicates that 69.2% of the respondents had household size between 1-5 persons while 30.4% of the respondents had household size above 5 persons. Household size determines the availability of family labour, the larger the household size, the more human capital available to the family that can contribute to family farming labour. Respondents had more than 20 years of processing experience (43.4%). This shows that



respondents are highly experienced in cassava processing.

**Table 1: Distribution of respondents by socioeconomic characteristics (n = 120)**

| Variables                             | Frequency | Percentage | Mean  | S.D.   |
|---------------------------------------|-----------|------------|-------|--------|
| <b>Age</b>                            |           |            |       |        |
| Below 21                              | 0         | 0          |       |        |
| 21 – 40                               | 61        | 50.8       | 38.58 | 11.230 |
| 41 – 60                               | 49        | 40.8       |       |        |
| >60                                   | 10        | 8.4        |       |        |
| <b>Sex</b>                            |           |            |       |        |
| Male                                  | 31        | 25.8       |       |        |
| Female                                | 89        | 74.2       |       |        |
| <b>Religion</b>                       |           |            |       |        |
| Christianity                          | 53        | 44.2       |       |        |
| Islam                                 | 43        | 35.8       |       |        |
| Traditional                           | 24        | 20.0       |       |        |
| <b>Marital status</b>                 |           |            |       |        |
| Single                                | 22        | 18.3       |       |        |
| Married                               | 75        | 62.5       |       |        |
| Divorced                              | 14        | 11.7       |       |        |
| Widowed                               | 1         | 0.8        |       |        |
| <b>Years of formal education</b>      |           |            |       |        |
| No formal education                   | 16        | 13.3       |       |        |
| Primary                               | 28        | 23.3       | 6.84  | 5.741  |
| Secondary                             | 56        | 46.7       |       |        |
| Tertiary                              | 20        | 16.7       |       |        |
| <b>Household size</b>                 |           |            |       |        |
| 1-5                                   | 83        | 69.2       |       |        |
| >5                                    | 37        | 30.4       |       |        |
| <b>Years of processing experience</b> |           |            |       |        |
| 1-10                                  | 18        | 15.0       |       |        |
| 10-20                                 | 50        | 41.6       |       |        |
| >20                                   | 52        | 43.4       |       |        |

Source: Field survey; 2015

#### Source of information

Result on source of information on table 2 shows that 41.5% of the respondents got their information from other processors while others

21.8%, 16.7%, 11.0%, 6.7% and 3.3% of the respondents sourced their information from radio, television, all of the above, extension agents, research institute and newspaper respectively.

**Table 2: Distribution of respondents by sources of information**

| Sources of information | Frequency | Percentage |
|------------------------|-----------|------------|
| Radio and Television   | 25        | 21.8       |
| Newspaper              | 8         | 3.3        |
| Other processors       | 49        | 41.5       |
| Extension agents       | 13        | 11.0       |
| Research institutions  | 4         | 6.7        |
| All of the above       | 20        | 16.7       |

Source: Field survey, 2015

#### Forms of value addition activities

Table 3 shows that 80.2% of the respondents indicate gari (80.2%), fufu (74.5%), lafun (66.4%), flour (58.0%), starch (47.3%), livestock feeds (45.8%), chips (27.4%) and tapioca (6.1%) as the forms in which they process cassava. The study reveals that chips and tapioca were not adequately

processed by the respondents. The result may be as a result of low literacy level among the respondents and the inadequacies in the farmer-processors/extension contact through which fresh opportunities and skill acquisition will be made available and possible to the prospective users.

**Table 3: Distribution of respondents based on various forms of value addition activities**

| Processed forms | Frequency | Percentage | Rank            |
|-----------------|-----------|------------|-----------------|
| Gari            | 105       | 80.2       | 1 <sup>st</sup> |
| Starch          | 62        | 47.3       | 5 <sup>th</sup> |
| Fufu            | 98        | 74.5       | 2 <sup>nd</sup> |
| Lafun           | 87        | 66.4       | 3 <sup>rd</sup> |
| Livestock feed  | 60        | 45.8       | 6 <sup>th</sup> |
| Chips           | 33        | 27.4       | 7 <sup>th</sup> |
| Cassava flour   | 76        | 58.0       | 4 <sup>th</sup> |
| Tapioca         | 8         | 6.1        | 8 <sup>th</sup> |

Source: Field survey, 2015

**Benefit derived from engagement in cassava value addition on rural household**

From table 4, increase in household food security shows a percentage of (80.8%), increase in income (66.7%), generation of employment opportunity for rural dwellers (58.3%), increase in demand for cassava and the products (58.3%) increase in involvement in economic and social

organization (54.2%), increase in marketing outlet for cassava(50.8%), increase in acreage cultivation (45.8%), reduction in cassava wastage (37.5%), improvement of the taste and quality of cassava (31.7%) and increase in access to agricultural information (30.8%). The distribution is not surprising as one of the major crop cultivated in the rural area is cassava.

**Table 4: Distribution of respondents based on benefit derived from engagement in cassava value addition on rural household**

| Benefit   | Frequency | Percentage | Ranking          |
|---|-----------|------------|------------------|
| Reduces cassava wastage                                   | 45        | 37.5       | 8 <sup>th</sup>  |
| Improves the taste and quality of cassava                 | 38        | 31.7       | 9 <sup>th</sup>  |
| Increases income  | 80        | 66.7       | 2 <sup>nd</sup>  |
| Increases acreage cultivation                             | 55        | 45.8       | 7 <sup>th</sup>  |
| Generates employment for rural dwellers                   | 70        | 58.3       | 3 <sup>rd</sup>  |
| Increases access to agricultural information              | 37        | 30.8       | 10 <sup>th</sup> |
| Increases involvement in economic and social organization | 65        | 54.2       | 5 <sup>th</sup>  |
| Increases household food security                         | 91        | 80.8       | 1 <sup>st</sup>  |
| Increases marketing outlet for cassava                    | 61        | 50.8       | 6 <sup>th</sup>  |
| Increases demand for cassava and the products             | 70        | 58.3       | 3 <sup>rd</sup>  |

Source: Field survey, 2015

Result on Table 5 shows that 42.5% of the respondents had high level of benefit while 57.5% had low level of benefit. This implies that the processors experienced relatively low level of

benefit. The fact that 57.5% had low level of benefit suggest the need to address the constraints faced when engaging in cassava value addition on rural household in the study area.

**Table 5: Distribution of respondents by level of benefit derived in engagement in cassava value addition**

| Level of benefit | Percent |
|------------------|---------|
| Low              | 57.5    |
| High             | 42.5    |
| Total            | 100     |

Source: Field survey, 2015

**Constraints faced by cassava farmers**

Table 6 shows the major constraints encountered by the processors as follows: inadequate capital (63.3%), transportation problem (50.8%), low level of cassava tuber production (41.7%), inadequate technical know-how of

processing machine (40.0%), lack of adequate value addition knowledge of cassava (37.5%), insufficient labour and inadequate market (33.3%) and involvement in many non-farm activities (24.2%).

**Table 6: Distribution of respondents based on constraints faced by cassava processors**

| Constraints                | Frequency | Percentage | Rank            |
|----------------------------|-----------|------------|-----------------|
| Inadequate capital         | 76        | 63.3       | 1 <sup>st</sup> |
| Low level of cassava tuber |           |            |                 |



|  |    |      |                 |
|--|----|------|-----------------|
| production   | 50 | 41.7 | 3 <sup>rd</sup> |
| Involvement in many non-farm activities              | 29 | 24.2 | 8 <sup>th</sup> |
| Inadequate market                                    | 40 | 33.3 | 6 <sup>th</sup> |
| Inadequate technical know-how of processing machine  | 48 | 40.0 | 4 <sup>th</sup> |
| Lack of adequate value addition knowledge of cassava | 45 | 37.5 | 5 <sup>th</sup> |
| Insufficient labour                                  | 40 | 33.3 | 6 <sup>th</sup> |
| Transportation                                       | 61 | 50.8 | 2 <sup>nd</sup> |

Source: Field survey, 2015

### Relationship between personal characteristics and benefit derived from engagement in cassava value addition

As presented in table 7, it reveals that age of the respondents ( $\chi^2 = 5.72$ ), marital status ( $\chi^2 = 2.14$ ) and household size ( $\chi^2 = 6.69$ ) were significantly associated with the effect of engagement in cassava value addition on rural household in the study area. This implies that age, household size and marital status of the respondents had effect on engagement in cassava

value addition on rural household in the study area while the other personal characteristics (religion and educational level) were not significant at the 0.05 level. It shows that respondents' age is vital to the volume of value adding activities he or she will carry out. Respondents should not be too old or too young but possess enough strength and experience gain to perform the value adding activities. The result also explains that respondents with larger household size would enjoy labour support which can thus help to boost production.

**Table 7: Statistical analysis of respondent's personal characteristics and benefit derived**

| Variable          | $\chi^2$ | Df | p-value | Remarks |
|-------------------|----------|----|---------|---------|
| Age               | 5.72     | 2  | 0.000   | S       |
| Marital status    | 2.14     | 3  | 0.05    | S       |
| Educational level | 14.22    | 3  | 0.24    | NS      |
| Household size    | 6.69     | 2  | 0.03    | S       |
| Religion          | 0.49     | 1  | 0.48    | NS      |

Source: Data analysis, 2015

df = degree of freedom,  $\chi^2$  = Chi square, S = significant, NS = not significant, p-value = significant at  $p = 0.05$

### CONCLUSION AND RECOMMENDATIONS

The study concludes that age, marital status and household size can be used to determine the effect of engagement in cassava value addition activities of rural household in the study area. Variables such as age, marital status and household size were shown to have positive effect on the respondents' engagement in cassava value addition activities of rural household in the study area. However:

1. the cassava processors should be organised into groups or cooperative society to address the problem of finance
2. Farmers should be encouraged to venture into cassava tuber production so that raw materials for processing will be readily available
3. The extension agencies should assist the processors to discover better technologies that can be used to overcome the problem of technical know-how and train them on how to utilise the improved processing machine

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